

# ABSTRACT

An apparatus for generating a Carrier-Suppressed Return-to-Zero (CS-RZ) signal is disclosed. The apparatus  
5 includes a mixer, a Low Pass Filter (LPF), a driver amplifier and a single external modulator. The mixer generates a modulator input by mixing data with a half clock signal. The LPF band-limits the modulator input data into low frequency band data. The driver amplifier amplifies the  
10 modulator input data generated by the mixing of the mixer and the band-limiting of the LPF. The external modulator generates CS-RZ signal, in which the phases of adjacent pulses have been inverted, by applying bias voltage to the modulator input data to be placed at the null point of the  
15 transfer function of the external modulator.